

## CLAIMS

1. A security door construction comprising a door and a door frame, wherein the door is mounted on an offset hinge assembly and the upright of the frame  
5 opposite the hinge has a door slot capable of receiving the closing edge of the door which upon closing slides into the door slot and upon opening slides out of the door slot.
2. A safety door construction as claimed in Claim 1, wherein the offset hinge  
10 assembly comprises a first pair of hinges connected to the frame, a second pair of hinges connected to the door and means connecting first and second pairs which maintains the hinge axis of the first pair parallel to the hinge axis of the second pair.
- 15 3. A security door construction as claimed in Claim 2, wherein the means is a rigid member connecting the pockets of one pair of hinges to the pins of the other pair of hinges.
4. A safety door construction as claimed in Claim 2, wherein the means is a rigid  
20 member connecting the pins of one pair of hinges to the pins of the other pair of hinges.
5. A safety door construction as claimed in Claim 2, wherein the means is a rigid  
25 member connecting the pockets of one pair of hinges to the pockets of the other pair of hinges.
6. A safety door construction as claimed in any one of Claims 3-5, wherein the rigid member is a rod or tube.
- 30 7. A security door construction as claimed in Claim 2, wherein the hinge pockets of one pair of hinges are fixed to the adjacent hinge pockets of the other pair and the rod or tube connects the pocket of the pair of hinges connected to the frame.
8. A security door construction as claimed in any one of Claims 2-7, wherein each

- 11 -

pocket of the pair of hinges which is fixed to the frame is welded at its end to the top and bottom horizontal face of the frame and the body of the pocket is additionally welded to an upstand also welded to the top or bottom face of the frame.

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9. A security door construction as claimed in any one of Claims 1-8, wherein the uprights of the frame are box section styles.
10. A security door construction as claimed in Claim 9, wherein the door slot is in the closing style.
11. A security door construction as claimed in Claim 9 or 10, wherein the frame is part of the safe and the body of the safe is made of a single plate panel which is formed into a channel section including the box section styles braced by a top plate and a bottom plate.
12. A security door construction as claimed in any one of Claims 1-11, wherein the slide motion is 15-25mm.
13. A security door construction as claimed in any one of Claims 1-12, wherein the door frame has a frame rail upstand behind the top and bottom edge of the rear face of the door, each rail has slot means and the corresponding area on the rear face of the door has hook means for engaging and disengaging when the door closes and opens.
14. A security door construction as claimed in any one of Claims 1-13, wherein the door frame has a closing surface parallel to the plane of the closed door against which the door tilts to close before the door reaches the door slot.
15. A security door construction as claimed in Claim 14, wherein the closing frame member is a channel section style and adjacent parallel L-section member fixed to the frame defines with the closing style, the slot for the door.
16. A security door construction as claimed in Claim 14 or 15, wherein the upright

- 12 -

members of the door frame are made of channel-section styles and an adjacent parallel L-section member fixed to the frame adjacent the door hinge style acts as a hinge support.

- 5 17. A security door construction as claimed in any one of Claims 6-16, wherein the door has a rotatable handle for opening and closing the door, the handle having a link which reacts against the rod or tube joining the frame mounted hinges, causing the door to slide left or right when the handle is rotated.
- 10 18. A security door construction as claimed in Claim 17, wherein the handle rotates between stops and a spring assists rotation by biasing the rotation toward one or other stop.
- 15 19. A security door construction as claimed in any one of Claims 2-18, wherein the frame hinges are adapted for fixing to the header and sill of the door casing and the door hinges are adapted for fixing to the door.
- 20 20. A security door construction as claimed in any one of Claims 2-18, wherein the door is a screen door made of hollow metal extrusions, and the frame hinges are adapted for fixing to a face of the frame and the door hinges are adapted for fixing to an edge of the door.
- 25 21. A security door construction as claimed in Claim 19 or 20, wherein the hinge assembly is at least partly housed in the door itself.
22. A security door construction as claimed in Claim 21, wherein the hinge assembly is housed in a tunnel at or near the support edge of the door.
- 30 23. A security door construction as claimed in any one of Claims 1-22, having a door closer arranged to bias the door shut in known manner and a biasing assembly associated with the door capable of sliding the door into the door slot when the door closer brings the door into register with the door slot.
24. A security door construction as claimed in Claim 23, wherein the door movement

- 13 -

caused by the biasing assembly is delayed until the door lands on the closing surface of the frame adjacent the door slot.

25. A security door construction as claimed in Claim 23 or 24, wherein the biasing  
5 assembly comprises a door handle with a crank inside the door which reacts  
against the rod or tube extending between the frame pivots, biasing means acting  
between the inside of the door and the crank in order to urge the door to slide  
toward the door slot, a link assembly connected to the crank which restrains the  
biasing means from imparting such slide motion to the door and a stop extending  
10 over at least part of the doors arc of swing which releases the link assembly at the  
end of the arc when the door registers with the door slot.
26. A security door construction as claimed in Claim 25, wherein the arcuate stop is  
concentric with the hinge axis of the frame hinges.
- 15 27. A safe containing a door construction as claimed in any one of Claims 1-27.
28. A pre-hung door comprising a casing and a security door construction as claimed  
in any one of Claims 1-28.
- 20 29. A hinge assembly for a security door construction as claimed in Claim 1,  
comprising a first pair of hinges connectable to a frame and a second pair of  
hinges connectable to a door and rod or tube connecting the frame hinges together  
so that the pockets of the first pair are fixed to the pockets of the second pair.

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